

Electromyostimulation for therapy of sleep induced apnea syndrome

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Objectives: The electrostimulation (EMS) is an innovative procedure for therapy in obstructive sleep induced apnea syndrome (OSAS). **Materials and methods:** In 15 male patients (mean age 52,2 years) with OSAS over a time period of 4 weeks 2 times daily the enoral-cutaneous EMS was applied by the BMR PolyStim 262 (Bio-Medical Research Company). All patients were registered previously and after 4 weeks by polysomnography and the volumetric measurement of the geniohyoid muscle was carried out by 3D-ultrasound. **Results:** 4 patients had a light, 9 a moderate and 2 a strong OSAS. After 4 weeks stimulation a reduction of the RDI in all groups of 34 % (group 1: RDI 34 %, group 2: 32 %, group 3: 46 %) could be proved with a responder ratio of 76 %. No improvement of the sleep parameters were only registered in group 1 and 2. The sonographical measurements of the geniohyoid muscle confirmed the influence of the training. Moreover, after 4 weeks stimulation an increase of volume could be proved in average of 7 %, 8 % and 8.3 % (group 1 – 3). In cases of an initial volume >12 ml of the muscles less training effects could be registered. **Conclusions:** The EMS enables a physiologically, non-invasive therapy of OSAS and should continuously be applied otherwise a relapse of the muscles is to be expected.

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